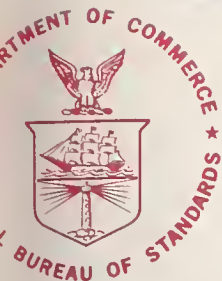


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NBS SPECIAL PUBLICATION **505**

Supplement 1

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Bibliography on Atomic Transition Probabilities (November 1977 through March 1980)

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Bibliography on Atomic Transition Probabilities (November 1977 through March 1980)

B. J. Miller, J. R. Fuhr, and G. A. Martin

Center for Radiation Research
National Measurement Laboratory
National Bureau of Standards
Washington, D.C. 20234



Special publication

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Foreword

The National Standard Reference Data System was established in 1963 for the purpose of promoting the critical evaluation and dissemination of numerical data of the physical sciences. The program is coordinated by the Office of Standard Reference Data of the National Bureau of Standards but involves the efforts of many groups in universities, government laboratories, and private industry. The primary aim of the program is to provide compilations of critically evaluated physical and chemical property data. These tables are published in the *Journal of Physical and Chemical Reference Data*, in the NSRDS-NBS series of the National Bureau of Standards, and through other appropriate channels.

The task of critical evaluation is carried out in various data centers, each with a well-defined technical scope. A necessary preliminary step to the critical evaluation process is the retrieval from the world scientific literature of all papers falling within the scope of the center. Each center, therefore, builds up a comprehensive well-indexed bibliographical file which forms the base for the evaluation task. Bibliographies derived from these files are published when they appear to be of value to research workers and others interested in the particular technical area.

Further information on NSRDS and the publications which form the primary output of the program may be obtained by writing to the Office of Standard Reference Data, National Bureau of Standards, Washington, DC 20234.

David R. Lide, Jr., Chief
Office of Standard Reference Data

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Washington, D.C. 20234

This is the first supplement to the NBS Special Publication 505, Bibliography on Atomic Transition Probabilities (1914 through October 1977), and it covers the literature on the subject from November 1977 through March 1980. It contains approximately 600 references, with each article assigned a number, and is divided into five main sections. The first section contains a listing, by number, of articles of general interest. The second section lists by number all articles containing numerical data; it is arranged by element and stage of ionization and is further subdivided according to theoretical and experimental methods, comments, and compilations. The third section contains a listing of all articles, including numbers, authors, title, and journal reference; it is arranged by year of publication, and alphabetically by authors' names within the year. All foreign language papers are identified, and their titles are translated into English. The fourth section contains a listing of all authors and the numbers of the papers they have authored or co-authored. A final section provides corrections or additions to the preceding bibliography.

Key words: Allowed; atomic; discrete; forbidden; intensity; lifetime; line strength; oscillator strength; transition probability.

A. Introduction

Since the publication of our comprehensive Bibliography on Atomic Transition Probabilities (1914 through October 1977),¹ about three years have passed during which time the number of new articles collected by the NBS Data Center on Atomic Transition Probabilities has become sufficient to warrant the issuance of a supplemental bibliography. This first supplement, containing about 600 references, includes all new papers that were received in the NBS library before March 31, 1980. The arrangement of the preceding bibliography¹ is retained. A few recently collected articles which were published prior to 1977 are listed in section C.3 under the year of publication. Since we feel that our collection of articles for the year 1977 is now essentially complete, but was necessarily incomplete in the earlier bibliography, all references for that year have been renumbered for this supplement and are listed here with the new numbers. As a result of corrections and additions that have been made since the initial ordering, for the years 1973,

1975, 1978, and 1979 the articles are not listed in strict alphabetical order, although the ordering by number is strictly maintained. We have also provided an errata section, consisting of corrections and additions to the bibliography. As additional information, references to tables of critically evaluated transition probability data have been included in this supplement. Also included are a listing of abbreviations used in section C.2 to indicate subject matter (table 1) and a listing of abbreviations used in section C.3 to indicate foreign languages (table 2). The conversion factors relating the transition probability A_{ki} , the absorption oscillator strength f_{ik} , and the line strength S are repeated here (table 3), since a few errors appeared in the corresponding table of the original bibliography.¹

We gratefully acknowledge the helpful comments and suggestions of Dr. W. L. Wiese in the course of the planning and preparation of this supplement.

¹ Fuhr, J. R., Miller, B. J., and Martin, G. A., Bibliography on Atomic Transition Probabilities (1914 through October 1977), Nat. Bur. Stand. (U.S.), Spec. Publ. 505, 283 pages (April 1978).

B. Numerical Tables of Critically Evaluated Transition Probabilities

1. For the elements hydrogen through neon:

Wiese, W. L., Smith, M. W., and Glennon, B. M., Atomic Transition Probabilities, Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.), 4, Vol. I, 157 pages (May 1966).

2. For the elements sodium through calcium:

Wiese, W. L., Smith, M. W., and Miles, B.M., Atomic Transition Probabilities, Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.), 22 Vol. II, 306 pages (Oct. 1969).

3. For Ba I and II:

Miles, B. M. and Wiese, W. L., Critically Evaluated Transition Probabilities for Ba I and Ba II, Nat. Bur. Stand. (U.S.), Tech. Note 474, 24 pages (Jan. 1969); At. Data 1, 1 (1969).

4. Selected updated material for elements hydrogen through calcium:

Wiese, W. L. and Glennon, B. M., *American Institute of Physics Handbook*, Ch. 7, 200-263, 3rd Ed. (McGraw-Hill Book Co., Inc., New York, N.Y., 1972).

5. For forbidden lines of the iron group elements:

Smith, M. W. and Wiese, W. L., J. Phys. Chem. Ref. Data 2, 85 (1973).

6. For allowed lines of scandium and titanium:

Wiese, W. L. and Fuhr, J. R., J. Phys. Chem. Ref. Data 4, 263 (1975).

7. For ions of the lithium isoelectronic sequence: Martin, G. A. and Wiese, W. L., J. Phys. Chem. Ref. Data 5, 537 (1976).

8. For allowed lines of vanadium through manganese:

Younger, S. M., Fuhr, J. R., Martin, G. A., and Wiese, W. L., J. Phys. Chem. Ref. Data 7, 4 (1978).

9. Selected material for elements hydrogen through uranium:

Wiese, W. L. and Martin, G. A., *CRC Handbook of Chemistry and Physics*, E349-E384, 61st ed. (CRC Press, Inc., Boca Raton, Fla., 1980) Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.), 68, Part II (in press).

10. For allowed lines of iron through nickel:

Fuhr, J. R., Martin, G. A., Wiese, W. L., and Younger, S. M., J. Phys. Chem. Ref. Data (in press).

11. For the elements scandium through nickel:

Martin, G. A., Wiese, W. L., Fuhr, J. R., and Younger, S. M., Nat. Stand. Ref. Data Ser., Nat. Bur. Stand. (U.S.), Vol. III (in preparation)

Table 1. Key to Code Words and Abbreviations Used in Section C.2

Except where "rel." (relative) appears, absolute values have been determined. Material on forbidden transitions is denoted as "forb."

A. Theoretical methods (T):	
1.	Quant.—quantum mechanical (including self-consistent field) calculations.
2.	CA—Coulomb approximation.
3.	Estim.—estimations from sum rules, etc.
4.	Interp.—interpolation with isoelectronic sequences, spectral series, or homologous atoms; also, data that are presented in graphical, rather than tabular, form.
3. Experimental methods (E):	
1.	Emiss.—measurements in emission (arc, furnace, discharge tube, shock tube, etc.).
2.	Absorpt.—measurements in absorption (King furnace, absorption tube, etc.).
3.	Life—lifetime measurements (including Hanle-effect).
4.	Hook—anomalous dispersion measurements.
5.	Misc.—miscellaneous experimental methods (for example, Stark effect, astrophysical measurements, etc.).
Other:	
1.	Comm.—additions or suggested revisions to data in previous articles, comments on particular theoretical or experimental methods, etc.
2.	Compil.—data compilations.

Table 2. Key to Abbreviations of Foreign Languages Used in Section C.3

Fr.	French
Ger.	German
Pol.	Polish
Russ.	Russian

Table 3. Numerical Conversion Factors

The transition probability is listed in units s^{-1} , the f -value is dimensionless, and the line strength is in atomic units. The wavelength λ is in angstrom units, and g_i and g_k are the statistical weights of the lower and upper states, respectively. E_d denotes electric dipole (allowed) transitions, E_q electric quadrupole (forbidden) transitions, and M_d magnetic dipole (forbidden) transitions.

Transition Probability $A_{ki} =$		$\frac{6.670_2 \times 10^{15}}{\lambda^2} \frac{g_i}{g_k} f_{ik}$	$E_d \frac{2.026_1 \times 10^{18}}{g_k \lambda^3} s$
			$E_q \frac{1.679_9 \times 10^{18}}{g_k \lambda^5} s$
			$M_d \frac{2.697_3 \times 10^{13}}{g_k \lambda^3} s$
Oscillator Strength $f_{ik} =$	$1.4992 \times 10^{-16} \lambda^2 \frac{g_k}{g_i} A_{ki}$		$E_d \frac{303.7_6}{g_i \lambda} s$
			$E_q \frac{251.9}{g_i \lambda^3} s$
			$M_d \frac{4.043_8 \times 10^{-3}}{g_i \lambda} s$
Line Strength $S =$	$E_d 4.935_5 \times 10^{-19} g_k \lambda^3 A_{ki}$	$E_d 3.292_1 \times 10^{-3} g_i \lambda f_{ik}$	
	$E_q 5.953 \times 10^{-19} g_k \lambda^5 A_{ki}$	$E_q 3.971 \times 10^{-3} g_i \lambda^3 f_{ik}$	
	$M_d 3.707_3 \times 10^{-14} g_k \lambda^3 A_{ki}$	$M_d 247.2_9 g_i \lambda f_{ik}$	

C. BIBLIOGRAPHIC MATERIAL

1. LITERATURE REFERENCES OF GENERAL INTEREST

1.1 TABLES OF NUMERICAL VALUES

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3509	W. L. Wiese & G. A. Martin, Atomic Transition Probabilities
3510	S. M. Younger, J. R. Fuhr, G. A. Martin, & W. L. Wiese, Atomic Transition Probabilities for Vanadium, Chromium, and Manganese (A Critical Data Compilation of Allowed Lines)
3588	A. R. Edmonds, J. Picart, N. Tran Minh, & R. Pullen, Tables for the Computation of Radial Integrals in the Coulomb Approximation
3741	K. Mori, M. Otsuka, & T. Kato, Grotrian Diagrams for Highly Ionized Iron Fe VIII-Fe XXVI

1.2 LITERATURE COMPILATIONS

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3386	J. R. Fuhr, B. J. Miller, & G. A. Martin, Bibliography on Atomic Transition Probabilities (1914 through October 1977)

1.3 REVIEW ARTICLES

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3090	A. L. Stewart, Atomic Structure and Oscillator Strengths
3121	L. Augustyniak & K. Dunajski, Theoretical and Experimental Investigations of Multipole Radiation of Atoms
3126	H. G. Berry, Beam-Foil Spectroscopy
3129	E. Biemont & N. Grevesse, f-Values and Abundances of the Elements in the Sun and Stars
3171	P. Erman, Recent Advances in Atomic and Molecular Physics Using Nuclear Spectroscopic Techniques
3194	A. Hibbert, Recent Advances in the Calculation of Oscillator Strengths
3195	M. C. E. Huber, f-Value Measurements for 3d Elements
3198	R. E. Imhof & F. H. Read, Measurement of Lifetimes of Atoms, Molecules, and Ions
3409	A. Hibbert, Atomic Structure Theory
3432	D. L. Lambert & R. E. Luck, The Abundances of the Elements in the Solar Photospheres--IX: Na to Ca

The numbers refer to paper identification numbers of Section 3.

- 3453 R. Marrus & P. J. Mohr, Forbidden Transitions in One- and Two-Electron Atoms
- 3455 I. Martinson, Experimental Studies of Atomic and Molecular Lifetimes
- 3501 J. Sucher, Magnetic Dipole Transitions in Atomic and Particle Physics: Ions and Psions
- 3570 L. J. Curtis, Recent Progress in Lifetime Measurements
- 3696 N. P. Penkin, Experimental Determination of Electronic Transition Probabilities and the Lifetimes of the Excited Atomic and Ionic States
- 3732 W. L. Wiese, Atomic Transition Probabilities and Lifetimes

1.4 FUNDAMENTAL RELATIONSHIPS AND BASIC CONCEPTS

--No entries in this category--

1.5 DETAILED DESCRIPTIONS OF EXPERIMENTAL OR THEORETICAL METHODS

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3185	M. Gustavsson, H. Lundberg, & S. Svanberg, An Efficient Method for Measuring Atomic and Molecular Lifetimes Using a Modulated or Deflected CW Dye Laser Beam
3210	M. Kock & M. Kühne, Hook Measurements on a Wall-Stabilized Arc
3327	J. Azencot & R. Goutte, Atomic Ionoluminescence Used in Differential Measurement of Excited State Lifetimes
3364	A. Corney & K. Gardner, A New Method for Determining f-Values Using Stimulated Electronic Raman Scattering in Atomic Vapours
3404	J. Hamel & J.-P. Barrat, Study of a Method for Measuring Lifetimes of Ionic Excited Levels in a Penning Collision Using Transfer Orientation
3428	J. Z. Klose, Measurement of Mean Lives in Atomic Uranium
3471	C. A. Nicolaides & D. R. Beck, Many-Body Theory of Photoabsorption in Atoms and Molecules
3535	J. W. Andrews, P. B. Coates, D. E. Blackwell, A. D. Petford, & M. J. Shallis, Precision Measurement of Relative Oscillator Strengths--V. Comparison of Oscillator Strengths of Fe I Transitions from Levels a $^5F_{1-5}$ (0.86-1.01 eV) and Those From a $^5D_{0-4}$ (0.00-0.12 eV)
3559	B. L. Cardon, P. L. Smith, & W. Whaling, New Method for Determining Relative Oscillator Strengths of Atoms Through Combined Absorption and Emission Measurements: Application to Titanium (Ti I)
3705	H. van Regemorter, D. Hoang Binh, & M. Prud'homme, Radial Transition Integrals Involving Low or High Effective Quantum Numbers in the Coulomb Approximation
3707	N. S. Ryazanov, Measurement of Anomalous Dispersion by a Four-Beam Rozhdestvenskii Interferometer

*The numbers refer to paper identification numbers of Section 3.

- 3773 R. J. Fonck & D. H. Tracy, Use of Semiclassical Wavefunctions for Calculation of Radial Integrals in the Coulomb Approximation

1.6 GENERAL COMMENTS

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3120	J. B. Atkinson, Lifetime Determinations and Their Errors Using Pulsed Dye Lasers
3129	E. Biemont & N. Grevesse, f-Values and Abundances of the Elements in the Sun and Stars
3193	J. D. Hey, The Role of the Oscillator Strength in the Determination of Plasma Densities
3195	M. C. E. Huber, f-Value Measurements for 3d Elements
3222	D. L. Lin, Gauge Properties of the Hartree-Fock and Random-Phase Approximations
3250	C. A. Nicolaides, The Continuum and Its Effect on Cascades in Beam-Foil Spectroscopy
3365	L. J. Curtis & D. G. Ellis, A Formula for Cancellation Disappearances of Atomic Oscillator Strengths
3377	P. Erman & S. Huldt, Trapping of Non-Resonance Radiation in Atoms and Its Influence on Measured Lifetimes of the 4p and 5p Levels in Ar I
3437	D. L. Lin, Velocity and Length Forms of Oscillator Strengths and Unitary Transformations of Quantum Electrodynamics
3467	C. A. Nicolaides & D. R. Beck, Transfer of Oscillator Strength in Regions of (Avoided) Crossings. The Two-State Approximation
3469	C. A. Nicolaides & D. R. Beck, Comment on the Luken-Sinanoglu Paper "Theory of Atomic Structures Including Electron Correlation. V. Excited States Not Lowest of their Symmetry and Oscillator Strengths in Neutral and Singly Ionized Atoms"
3491	U. I. Safronova, Equivalency of Approaches to the Calculation of Oscillator Strengths in the Length and Velocity Forms
3512	S. M. Younger & W. L. Wiese, Theoretical Simulation of Beam-Foil Decay Curves for Resonance Transitions of Heavy Ions
3516	W. L. Luken & O. Sinanoglu, Reply to "Comment on 'Theory of Atomic Structures Including Electron Correlation. V.'" "
3540	S. Bashkin, Comments on Beam-Foil Spectroscopy
3568	D. Cotter, The Measurement of Atomic Oscillator Strengths Using the SERS Polarization Flip Method
3569	L. J. Curtis, Use of Hydrogenic Transition Probabilities for Non-Penetrating Rydberg States with Core Polarization
3586	H. W. Drawin, Atomic and Molecular Structure and Collision Data with Application to Fusion Research

*The numbers refer to paper identification numbers of Section 3.

3603	T. F. Gallagher & W. E. Cooke, Interactions of Blackbody Radiation with Atoms
3635	B. M. Johnson, Use of Spectra from Foil-Excited Heavy-Ion Beams to Interpret Radiation from Plasmas
3646	D. H. Kobe, Gauge-Invariant Resolution of the Controversy Over Length Versus Velocity Forms of the Interaction with Electric Dipole Radiation
3656	W. L. Luken, Rydberg-Valence Mixing in Atoms and Molecules
3686	H. Nussbaumer, Oscillator Strengths of Astrophysical Interest
3698	E. H. Pinnington & R. N. Gosselin, Can the ANDC Method Really Overcome the Cascading Problem in B.F.S. Lifetime Measurements?
3731	W. L. Wiese, Atomic Processes for Magnetic Fusion Research and Their Data Status
3787	M. H. Miller & R. D. Bengtson, Oscillator Strength Trends in Group IV Homologous Ions

1.7 ENVIRONMENTAL INFLUENCES ON TRANSITION PROBABILITIES

<u>Reference No.*</u>	<u>Author(s) and Title</u>
3213	Z. I. Kupliauskis, Influence of Core Relaxation on Oscillator Strengths
3603	T. F. Gallagher & W. E. Cooke, Interactions of Blackbody Radiation with Atoms
3769	W. E. Cooke & T. F. Gallagher, Effects of Blackbody Radiation on Highly Excited Atoms

*The numbers refer to paper identification numbers of Section 3.

2. LITERATURE REFERENCES CONTAINING NUMERICAL DATA

(References on individual elements and stages of ionization,
classified according to method)

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Ag (Silver) Sequence		quant. forb.	3436
		(see also references on Mg sequence)	
T: interp.	3563	<u>Al III</u>	
Ag (Silver)		E: life	3542,3641,3642
		T: quant.	3398
		(see also references on Na sequence)	
		<u>Al IV</u>	
E: absorpt. rel.	3349	E: life	3372,3542,3561, 3562,3641,3642
life	3494	T: quant.	3442,3561,3562
T: quant.	3403,3458,3460, 3563,3671,3673	(see also references on Ne sequence)	
Al (Aluminum) Sequence		<u>Al V</u>	
T: estim.	3240	E: life	3145,3372,3542, 3641,3642
quant.	3381	(see also references on F sequence)	
Al (Aluminum)		<u>Al VI</u>	
		E: life	3145,3542,3641, 3642
		T: quant. rel.	3626
		(see also references on O sequence)	
		<u>Al VII</u>	
		E: life	3145,3641,3642
		(see also references on N sequence)	
		<u>Al I</u>	
E: life	3191,3494,3643		
T: CA	3328		
quant.	2839,3214,3328, 3397,3459		
		<u>Al II</u>	
E: life	3542,3641,3642		
T: quant.	2843,3214,3650, 3667		

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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Al VIII

E: life	3457
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(see also references on C sequence)

Al IX

E: life	3576
T: CA	3789

(see also references on B sequence)

Al X

E: life	3576
T: CA	3789

(see also references on Be sequence)

Al XI

E: life	3576
T: quant.	3557,3779
quant. forb.	3344

(see also references on Li sequence)

Al XII

E: life	3574
T: interp.	2624
quant.	3136,3137,3160, 3221

(see also references on He sequence)

Ar (Argon) Sequence

T: interp.	3224
------------	------

Ar (Argon)

Ar I

E: absorpt.	3728
emiss.	3091,3254,3266, 3357,3408,3486, 3790

<u>Description</u>	<u>Reference No.*</u>
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life	3206,3357,3377, 3417
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misc.	3291
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T: CA	3408,3780
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quant.	2843,3224,3389
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Comment:	3790
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Ar II

E: emiss.	3254,3266,3408, 3465,3486
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life	3484
------	------

T: CA	3408
-------	------

quant.	3187,3214,3441
--------	----------------

Ar III

E: life	3484
---------	------

T: quant.	3214
-----------	------

Ar V

T: quant.	3380
-----------	------

Ar VI

T: quant.	3380
-----------	------

(see also references on Al sequence)

Ar VII

T: quant.	2843,3122,3161, 3650,3667
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(see also references on Mg sequence)

Ar VIII

E: life	3645,3700
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T: quant.	3161
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quant. forb.	3335
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(see also references on Na sequence)

Ar IX

E: life	3332,3645
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T: quant.	3332,3380,3554
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(see also references on Ne sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
--------------------	-----------------------

Ar X

T: quant.	3380
-----------	------

(see also references on F sequence)

Ar XI

T: quant.	3201,3546
quant. forb.	3201,3546

(see also references on O sequence)

Ar XII

T: quant.	3201,3763
quant. forb.	3201,3763

(see also references on N sequence)

Ar XIII

T: quant.	3201,3577
quant. forb.	3201,3577

(see also references on C sequence)

Ar XIV

T: quant.	3577
quant. forb.	3577

(see also references on B sequence)

Ar XV

T: quant.	3161,3617,3620
-----------	----------------

(see also references on Be sequence)

Ar XVI

E: life forb.	3368,3369,3582
T: quant.	3161,3295,3557
Comment:	3724

(see also references on Li sequence)

Ar XVII

E: life	3168,3368,3582
---------	----------------

(see also references on He sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
--------------------	-----------------------

As (Arsenic)

As I

E: absorpt. rel.	3246
emiss.	3786

As III

E: life	3116
---------	------

As IV

E: life	3534
---------	------

(see also references on Zn sequence)

As V

T: quant.	3172
-----------	------

(see also references on Cu sequence)

As XXV

T: quant.	3778
-----------	------

(see also references on F sequence)

As XXVI

T: quant.	3135
quant. forb.	3135

(see also references on O sequence)

As XXXII

T: quant.	3740
quant. forb.	3740

(see also references on He sequence)

Au (Gold)

Au I

T: quant.	3403,3458,3460, 3671
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<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>Au XXXIII</u>		<u>Au LI</u>	
T: quant	3563	T: quant.	3161
(see also references on Ag sequence)		(see also references on Cu sequence)	
<u>Au XXXV</u>		<u>Au LII</u>	
T: quant. forb.	3161	T: quant.	3161
<u>Au XXXVI</u>		<u>Au LIII</u>	
T: quant. forb.	3161	T: quant. forb.	3161
<u>Au XLII</u>		<u>Au LIV</u>	
T: quant. forb.	3161	T: quant. forb.	3161
<u>Au XLIII</u>		<u>Au LX</u>	
T: quant.	3161	T: quant. forb.	3161
quant. forb.	3161	<u>Au LXI</u>	
<u>Au XLIV</u>		T: quant.	3161
T: quant.	3161	quant. forb.	3161
quant. forb.	3161	(see also references on K sequence)	
<u>Au XLV</u>		<u>Au LXII</u>	
T: quant.	3161	T: quant. forb.	3161
quant. forb.	3161	(see also references on Ar sequence)	
<u>Au XLVI</u>		<u>Au LXIII</u>	
T: quant.	3161	T: quant. forb.	3161
<u>Au XLVII</u>		<u>Au LXVIII</u>	
T: quant.	3161	T: quant.	3161
<u>Au XLVIII</u>		(see also references on Mg sequence)	
T: quant.	3161	<u>Au LXIX</u>	
quant. forb.	3161	T: quant.	3161
<u>Au XLIX</u>		(see also references on Na sequence)	
T: quant.	3161	<u>Au LXXVI</u>	
quant. forb.	3161	T: quant.	3161
<u>Au L</u>		(see also references on Be sequence)	
T: quant.	3161	<u>Au LXXVII</u>	
quant. forb.	3161	T: quant.	3161
(see also references on Zn sequence)		(see also references on Li sequence)	

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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B (Boron) Sequence

T: estim.	3240
interp.	3166
quant.	3366,3379

B (Boron)

B I

T: interp.	3597
quant.	3123,3212

B II

T: quant.	3123,3169,3395, 3435,3463,3610
quant. forb.	3436

(see also references on Be sequence)

B III

T: quant.	3363,3607
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(see also references on Li sequence)

B IV

E: life	3370
T: quant.	3394

(see also references on He sequence)

B V

E: life	3370,3685
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(see also references on H sequence)

Ba (Barium)

Ba I

E: hook	3407,3479
hook forb.	3602
life	3202,3415,3634

<u>Description</u>	<u>Reference No.*</u>
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T: interp.	3537
quant.	2628,3403
quant. forb.	2628
quant. rel.	2628

Ba II

E: life	3189,3298,3420, 3431
life forb.	3711
T: CA	3225
quant.	2840,3403,3672

Be (Beryllium) Sequence

T: estim.	3240
estim. forb.	3784
interp.	3343
quant.	3088,3153,3219, 3271,3292,3293, 3379,3491,3493
quant. forb.	3283,3438,3723

Comment:	3153
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Be (Beryllium)

Be I

T: CA	3742
quant.	2843,3181,3395, 3435,3463,3471, 3566,3610
quant. forb.	3436

Be II

T: quant.	3363,3471,3607
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(see also references on Li sequence)

Be III

T: quant.	3394
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*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
quant. forb.	3436
(see also references on He sequence)	

Bi (Bismuth)

	<u>Bi I</u>	
E: emiss.	3401	
emiss. rel.	3401	
life	3477,3485	
T: quant.	3192,3383	

	<u>Bi II</u>	
E: life	3477	

	<u>Bi V</u>	
T: quant.	3671	

	<u>Bi LXXV</u>	
T: quant.	3706	
(see also references on F sequence)		

Br (Bromine)

	<u>Br I</u>	
T: quant.	3187	

	<u>Br V</u>	
E: life	3262	

	<u>Br VI</u>	
E: life	3209,3262	
T: quant.	3161,3497	
(see also references on Zn sequence)		

	<u>Br VII</u>	
E: life	3209,3262	
T: quant.	3161	
(see also references on Cu sequence)		

<u>Description</u>	<u>Reference No.*</u>
	<u>Br VIII</u>
T: quant.	3161

C (Carbon) Sequence

T: estim.	3240
quant.	2841,3379
quant. forb.	1973,3379,3687

C (Carbon)

	<u>C I</u>	
E: life	3144,3514	
T: quant.	3362,3606,3677	
Compilation:	3112	

	<u>C II</u>	
E: life	3152,3371	
T: interp.	3597	
quant.	3166,3212,3245,3555	
Compilation:	3112	
(see also references on B sequence)		

	<u>C III</u>	
E: life	3152,3371,3719	
T: quant.	3245,3270,3395,3435,3463,3474,3610,3618,3633	
quant. forb.	3436,3474	
Compilation:	3112	

(see also references on Be sequence)

	<u>C IV</u>	
E: life	3371,3439	
T: quant.	3245,3363,3775	
Compilation:	3112	

(see also references on Li sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
	<u>C V</u>
T: quant.	3726
quant. forb.	3436
Compilation:	3112
(see also references on He sequence)	

Ca (Calcium)

	<u>Ca I</u>
E: life	3190,3257,3591
T: quant.	3247,3403,3614

	<u>Ca II</u>
E: life	3257
T: CA	3225
quant.	2840,3403
(see also references on K sequence)	

	<u>Ca III</u>
T: quant.	3224
(see also references on Ar sequence)	

	<u>Ca VII</u>
T: quant.	3416

	<u>Ca IX</u>
T: quant.	3416
(see also references on Mg sequence)	

	<u>Ca X</u>
T: quant.	3341
(see also references on Na sequence)	

	<u>Ca XI</u>
T: interp.	3332
quant.	3554
(see also references on Ne sequence)	

	<u>Ca XIII</u>
T: quant.	3134,3140,3201, 3508

<u>Description</u>	<u>Reference No.*</u>
quant. forb.	3179,3201
(see also references on O sequence)	

	<u>Ca XIV</u>
T: quant.	3201,3763
quant. forb.	3201,3763
(see also references on N sequence)	

	<u>Ca XV</u>
T: quant.	3142,3201,3342, 3577
quant. forb.	3201,3577
(see also references on C sequence)	

	<u>Ca XVI</u>
T: quant.	3577
quant. forb.	3577
(see also references on B sequence)	

	<u>Ca XVII</u>
T: quant.	3617,3620,3690
quant. forb.	3690
(see also references on Be sequence)	

	<u>Ca XVIII</u>
T: quant. forb.	3275
(see also references on Li sequence)	

	<u>Ca XIX</u>
T: quant.	2627,3709,3777
quant. forb.	3777
(see also references on He sequence)	

Cd (Cadmium)

	<u>Cd I</u>
E: emiss.	3114,3564
life	3199,3727

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
T: quant.	3403	<u>Cl IX</u>	
	<u>Cd II</u>	E: life	3385,3390
E: life	3199	T: quant.	3390
T: quant.	3671	(see also references on F sequence)	
(see also references on Ag sequence)		<u>Cl X</u>	
		E: life	3385,3390
		T: quant.	3390
		(see also references on O sequence)	
		<u>Cl XI</u>	
T: CA	3225	E: life	3385
quant.	3672	(see also references on N sequence)	
		<u>Cl XII</u>	
		E: life	3385
		(see also references on C sequence)	
		<u>Cl XIII</u>	
E: absorpt.	3157,3158	E: life	3385,3413
emiss.	3300	(see also references on B sequence)	
T: quant.	3156,3187,3214	<u>Cl XIV</u>	
	<u>Cl II</u>	E: life	3385,3413,3695
E: life	3424	(see also references on Be sequence)	
T: quant.	3214	<u>Cl XV</u>	
	<u>Cl III</u>	E: life	3385,3413
T: quant.	3214,3471	T: quant. forb.	3344
	<u>Cl VI</u>	(see also references on Li sequence)	
T: quant.	2843,3650		
quant. forb.	3436		
Comment:	3569		
(see also references on Mg sequence)			
	<u>Cl VIII</u>		
E: life	3332,3390		
T: quant.	3332		
(see also references on Ne sequence)			

Co (Cobalt)

Co I

E: absorpt.	3552
life	3208,3232,3263,3718
T: quant.	3333

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
	<u>Co II</u>		
E: life	3718	quant.	3322
		(see also references on K sequence)	
	<u>Co VII</u>		<u>Cr XI</u>
T: quant.	3084	T: quant. forb.	3161
	<u>Co XVI</u>		<u>Cr XII</u>
T: quant.	3637	T: quant. forb.	3161
(see also references on Mg sequence)		(see also references on Al sequence)	
	<u>Co XX</u>		<u>Cr XIII</u>
T: quant.	3135	T: quant.	3637
quant. forb.	3135	quant. forb.	3161
(see also references on O sequence)		(see also references on Mg sequence)	
Cr (Chromium)			<u>Cr XV</u>
	<u>Cr I</u>	T: quant.	3425,3554
E: absorpt.	3196,3552	quant. forb.	3161,3425
hook	3196	(see also references on Ne sequence)	
life	3125,3239,3783		<u>Cr XVI</u>
T: quant.	3597	T: quant. forb.	3161
Comment:	3124	(see also references on F sequence)	
	<u>Cr II</u>		<u>Cr XVII</u>
E: emiss.	3683	T: quant.	3201
T: quant.	3322	quant. forb.	3161,3201
	<u>Cr III</u>	(see also references on O sequence)	
E: life	3117		<u>Cr XVIII</u>
T: quant.	3322	T: quant. forb.	3161,3201
	<u>Cr IV</u>	(see also references on N sequence)	
T: quant.	3322		<u>Cr XIX</u>
	<u>Cr V</u>	T: quant.	3201
T: quant.	3322	quant. forb.	3161,3201
	<u>Cr VI</u>	(see also references on C sequence)	
T: CA	3225		<u>Cr XX</u>
		T: quant. forb.	3161
		(see also references on B sequence)	

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
Cr XXIII	
T: quant.	3740
quant. forb.	3740
(see also references on He sequence)	

Cs (Cesium)

<u>Cs I</u>	
E: absorpt.	3253,3443
absorpt. rel.	3487
hook	3712
life	3113,3170,3185, 3230,3231,3356, 3658,3661,3715
misc. rel.	3364
T: CA	3225,3622
estim.	2385
interp. rel.	2188
quant.	2385,2839,3249, 3403,3672,3704

<u>Cs II</u>	
E: life	3692,3760

Cu (Copper) Sequence

T: interp.	3295,3511,3571, 3737
quant.	3358,3359,3669

Cu (Copper)

<u>Cu I</u>	
E: absorpt.	3405
absorpt. rel.	3349
emiss. rel.	3515
hook	3653

<u>Description</u>	<u>Reference No.*</u>
hook rel.	3653
life	3449
T: quant.	3172,3403,3458, 3460

Cu XIX

E: life	3261
(see also references on Na sequence)	

Cu XXI

T: quant.	3778
(see also references on F sequence)	

Cu XXII

T: quant.	3135
quant. forb.	3135
(see also references on O sequence)	

Dy (Dysprosium)

<u>Dy I</u>	
E: life	3411,3627

<u>Dy XXXIX</u>	
T: quant.	3794

Er (Erbium)

<u>Er I</u>	
E: absorpt.	3583
hook rel.	3131

Eu (Europium)

<u>Eu I</u>	
E: life	3627
<u>Eu II</u>	
E: absorpt.	3427

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
emiss.	3427
life	3337

F (Fluorine) Sequence

T: estim.	3240
interp.	3706

F (Fluorine)

F I

E: absorpt.	3157
life	3500

F II

E: life	3644,3699
(see also references on O sequence)	

F III

E: life	3483,3644
T: quant.	3331
(see also references on N sequence)	

F IV

E: life	3483,3644
T: quant.	3677
(see also references on C sequence)	

F V

E: life	3644
T: quant.	3689
(see also references on B sequence)	

F VI

E: life	3589,3590,3644
T: quant.	3395,3633,3689, 3725
quant. forb.	3689

(see also references on Be sequence)

<u>Description</u>	<u>Reference No.*</u>
	<u>F VII</u>
E: life	3644
T: quant.	3363
(see also references on Li sequence)	

F VIII

E: life	3573,3644
T: quant.	3725
quant. forb.	3725

(see also references on He sequence)

Fe (Iron)

Fe I

E: absorpt.	3547,3548,3552
emiss.	3489
life	3267,3660
Comment:	3549

Fe II

E: emiss.	3679
life	3584
misc.	3764
Comment:	3764
Compilation:	3697

Fe III

E: life	3117,3584
T: quant.	3322

Fe IV

T: quant.	3322
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Fe V

E: life	3587
T: quant.	3322

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>Fe VI</u>		<u>Fe XV</u>	
E: life	3587	T: quant.	2843,3122,3161, 3416,3556,3667
T: quant.	2446,3322	quant. forb.	3161
quant. forb.	3392,3475	(see also references on Mg sequence)	
<u>Fe VII</u>		<u>Fe XVI</u>	
T: quant.	2446	T: quant.	3161,3295,3341, 3450,3556
<u>Fe VIII</u>		(see also references on Na sequence)	
T: quant.	3161	<u>Fe XVII</u>	
quant. forb.	3612	E: misc.	2842
(see also references on K sequence)		T: quant.	3270,3425,3554, 3593
<u>Fe IX</u>		quant. forb.	3161,3425
T: quant.	3174,3224	(see also references on Ne sequence)	
quant. forb.	3174	<u>Fe XVIII</u>	
(see also references on Ar sequence)		E: misc.	2842
<u>Fe X</u>		T: quant.	3139,3143,3354, 3550,3706
T: quant.	3138	quant. forb.	3161
quant. forb.	3238	(see also references on F sequence)	
<u>Fe XI</u>		<u>Fe XIX</u>	
T: quant.	3138	T: quant.	3087,3134,3135, 3139,3140,3143, 3201,3354
quant. forb.	3238	quant. forb.	3135,3161,3179, 3201
<u>Fe XII</u>		(see also references on O sequence)	
T: quant.	3347	<u>Fe XX</u>	
quant. rel.	3173	T: quant.	3134,3139,3141
quant. forb.	3173	quant. forb.	3161,3201
<u>Fe XIII</u>		(see also references on N sequence)	
T: quant.	3347,3416	<u>Fe XXI</u>	
quant. forb.	3161	T: interp. forb.	3586
<u>Fe XIV</u>			
T: quant. forb.	3161		
(see also references on Al sequence)			

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
quant.	3139,3142,3201, 3342,3664
quant. forb.	3161,3201,3664
(see also references on C sequence)	

Fe XXII

T: quant.	2445,3348,3354
quant. forb.	3161
(see also references on B sequence)	

Fe XXIII

E: life	3367
T: quant.	3161,3348,3354, 3617,3620,3690
quant. forb.	3690
Comment:	3690
(see also references on Be sequence)	

Fe XXIV

E: life	3367
T: quant.	3087,3161,3295, 3354,3492,3543, 3544,3629
quant. forb.	3087
(see also references on Li sequence)	

Fe XXV

E: life	3184
life forb.	3184
T: quant.	2627,3221,3354
(see also references on He sequence)	

Fm (Fermium)

Fm XCII

T: quant.	3706
(see also references on F sequence)	

<u>Description</u>	<u>Reference No.*</u>
	<u>Fm XCIX</u>
T: quant.	3709,3777
(see also references on He sequence)	

Ga (Gallium)

Ga I

E: life	3191
T: quant.	2839,3397,3459, 3670

Ga II

E: life	3534,3575
T: quant.	3497
(see also references on Zn sequence)	

Ga III

T: quant.	3172
(see also references on Cu sequence)	

Ga XXIII

T: quant.	3778
(see also references on F sequence)	

Ga XXIV

T: quant.	3135
quant. forb.	3135
(see also references on O sequence)	

Ga XXX

T: quant.	3740
quant. forb.	3740
(see also references on He sequence)	

Gd (Gadolinium)

Gd XXXVII

T: quant.	3794
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*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference Nos.*</u>	<u>Description</u>	<u>Reference No.*</u>
Ge (Germanium)		H (Hydrogen)	
	<u>Ge I</u>		<u>H I</u>
E: emiss.	3444	Comment:	3361
	<u>Ge II</u>	He (Helium) Sequence	
E: life	3116		
	<u>Ge III</u>	T: estim.	3240
E: life	3534	interp.	3361,3709
(see also references on Zn sequence)		quant.	3088,3159,3205, 3220,3271,3273, 3290,3393,3434, 3493,3506,3585, 3793
	<u>Ge IV</u>	quant. forb.	2742,3220,3506, 3513,3738
T: quant.	3241	Comment:	3223,3233
(see also references on Cu sequence)			
	<u>Ge XXIV</u>	He (Helium)	
T: quant.	3148,3778		
(see also references on F sequence)			
	<u>Ge XXV</u>		<u>He I</u>
T: quant.	3135	E: absorpt.	3296
quant. forb.	3135	emiss.	3767,3772
(see also references on O sequence)		life	3146,3151,3256, 3414,3421,3422, 3429,3476,3648, 3651,3734
	<u>Ge XXXI</u>	misc.	3630
T: quant.	3740	T: quant.	3394,3470,3471
quant. forb.	3740	quant. forb.	3436
(see also references on He sequence)		Compilation:	3280
H (Hydrogen) Sequence			<u>He II</u>
T: estim.	3240	E: emiss. rel.	3211
quant.	3133,3203,3294, 3506	life forb.	3410
quant. forb.	3133,3294	(see also references on H sequence)	

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

Hf (Hafnium)

Hf XLV

T: quant. 3794

Hg (Mercury)

Hg I

E: emiss. 3164,3279,3447,
3462

life 3115,3324,3551

misc. 3765

T: quant. 3403

Hg II

E: emiss. 3495

quant. 3671

Ho (Holmium)

Ho I

E: hook rel. 3340

I (Iodine)

I I

E: emiss. rel. 3285

life 3648

T: quant. 1818,3187,3285

Comment: 3197

I II

E: life 3648

I VI

E: life 3691

T: quant. 3691

Description Reference No.*

I VII

E: life 3691

T: quant. 3671,3691

(see also references on Ag sequence)

I XXV

E: life 3636

(see also references on Cu sequence)

In (Indium)

In I

E: life 3191,3445,3684

T: quant. 2839,3397,3459,
3670

In III

T: quant. 3671

(see also references on Ag sequence)

Ir (Iridium)

Ir I

E: life 3488

K (Potassium) Sequence

T: quant. 3128

K (Potassium)

K I

E: life 3503,3605

T: CA 3225,3622

interp. 3792

quant. 3704,3736

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

K II

E: emiss. 3717
T: quant. 3224
(see also references on Ar sequence)

K III

T: quant. 3214

K IX

T: quant. 3295
(see also references on Na sequence)

K X

T: interp. 3332
(see also references on Ne sequence)

K XIII

T: quant. 3141
(see also references on N sequence)

K XVII

T: quant. rel. 3344
quant. forb. 3344
(see also references on Li sequence)

Kr (Krypton)

Kr I

E: absorpt. rel. 3276
emiss. 3378,3408,3538,
3600,3601,3774
emiss. rel. 3600,3774
life 3384,3417,3599,
3600
misc. 3180,3649
T: CA 3408,3774
CA rel. 3774
quant. 3180,3326,3601

Description Reference No.*

Kr II

E: emiss. 3408,3538
life 3243,3678
T: CA 3408
quant. 3187,3286

Kr VII

E: life 3209
T: quant. 3161

(see also references on Zn sequence)

Kr VIII

E: life 3209,3700,3785
T: quant. 3161,3172,3295,
3737

Comment: 3733,3785
(see also references on Cu sequence)

Kr IX

T: quant. 3161

Kr XVIII

T: quant. 3161
quant. forb. 3161

(see also references on K sequence)

Kr XIX

T: quant. forb. 3161
(see also references on Ar sequence)

Kr XX

T: quant. forb. 3161

Kr XXI

T: quant. forb. 3161

Kr XXII

T: quant. forb. 3161

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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Kr XXIII

T: quant. forb.	3161
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Kr XXIV

T: quant. forb.	3161
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(see also references on Al sequence)

Kr XXV

T: quant.	3161
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quant. forb.	3161
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(see also references on Mg sequence)

Kr XXVI

T: quant.	3161,3295,3341, 3557,3621
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(see also references on Na sequence)

Kr XXVIII

T: quant.	3557
-----------	------

quant. forb.	3161
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(see also references on F sequence)

Kr XXIX

T: quant. forb.	3161
-----------------	------

(see also references on O sequence)

Kr XXX

T: quant. forb.	3161
-----------------	------

(see also references on N sequence)

Kr XXXI

T: quant. forb.	3161
-----------------	------

(see also references on C sequence)

Kr XXXII

T: quant. forb.	3161
-----------------	------

(see also references on B sequence)

Kr XXXIII

E: life	3580
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<u>Description</u>	<u>Reference No.*</u>
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T: quant.	3161,3690
-----------	-----------

quant. forb.	3690
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(see also references on Be sequence)

Kr XXXIV

E: life	3580
---------	------

T: quant.	3161,3295
-----------	-----------

(see also references on Li sequence)

Kr XXXV

E: life	3184
---------	------

life forb.	3184
------------	------

(see also references on He sequence)

La (Lanthanum)

La I

E: life	3352
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La II

E: life	3118,3119
---------	-----------

La III

T: CA	3225
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quant.	3672
--------	------

Li (Lithium) Sequence

T: CA	3225
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estim.	3240
--------	------

interp.	3295,3361
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quant.	3127,3128,3159, 3175,3277,3493, 3506
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Li (Lithium)

Li I

E: life	3200,3278,3327, 3466,3631
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*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
misc.	3714	<u>Mg VI</u>	
misc. forb.	3714	T: quant.	3763
T: quant.	3217,3251,3274, 3353,3468,3553, 3680,3704,3716, 3736	quant. forb.	3763
		(see also references on N sequence)	
	<u>Li II</u>	<u>Mg VII</u>	
E: life forb.	3781	E: life	3457
T: quant.	3726	T: quant.	3201,3456
(see also references on He sequence)		quant. forb.	3201,3456
		(see also references on C sequence)	
Mg (Magnesium) Sequence		<u>Mg IX</u>	
T: estim.	3240	T: quant.	3343,3505,3617, 3620
interp.	3122,3154,3596, 3655	quant. forb.	3436
quant.	1002,3154,3284, 3596	(see also references on Be sequence)	
		<u>Mg X</u>	
Mg (Magnesium)		E: life	3681
<u>Mg I</u>		misc.	2842
E: life	3190,3419,3640, 3782	T: quant. rel.	3344
T: quant.	2843,3122,3165, 3214,3247	quant. forb.	3344
quant. forb.	3436	(see also references on Li sequence)	
<u>Mg II</u>		<u>Mg XI</u>	
T: quant.	2840,3398	E: misc.	2842
(see also references on Na sequence)		T: interp.	2624
<u>Mg III</u>		quant.	3136,3137,3221, 3771
T: quant.	3399,3400	(see also references on He sequence)	
(see also references on Ne sequence)		Mn (Manganese)	
<u>Mg V</u>		<u>Mn I</u>	
T: quant.	3201	E: absorpt. rel.	3349
quant. forb.	3201	emiss.	3623
(see also references on O sequence)		life	3623

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
<u>Mn II</u>	
E: emiss.	3237
life	3237
<u>Mn III</u>	
E: life	3117
quant.	3322
<u>Mn IV</u>	
T: quant.	3322
<u>Mn V</u>	
T: quant.	3322
<u>Mn VI</u>	
T: quant.	3322
<u>Mn VII</u>	
T: CA	3225
(see also references on K sequence)	
<u>Mn XIV</u>	
T: quant.	3637
(see also references on Mg sequence)	
<u>Mn XXIV</u>	
T: quant.	3740
quant. forb.	3740
(see also references on He sequence)	
Mo (Molybdenum)	
<u>Mo I</u>	
E: absorpt. rel.	3349
hook rel.	3242
life	3329
<u>Mo VI</u>	
T: CA	3225
quant.	3672

<u>Description</u>	<u>Reference No.*</u>
<u>Mo XIII</u>	
T: quant.	3161,3330,3497
(see also references on Zn sequence)	
<u>Mo XIV</u>	
T: CA	3162
quant.	3161,3172,3295,3737
(see also references on Cu sequence)	
<u>Mo XV</u>	
T: quant.	3161,3224,3426
quant. forb.	3426
<u>Mo XVI</u>	
T: quant. forb.	3161
<u>Mo XXIV</u>	
T: quant.	3161
quant. forb.	3161
(see also references on K sequence)	
<u>Mo XXV</u>	
T: estim.	3345
quant.	3161
quant. forb.	3161
(see also references on Ar sequence)	
<u>Mo XXVI</u>	
T: estim.	3345
quant.	3161
quant. forb.	3161
<u>Mo XXVII</u>	
T: estim.	3345
quant.	3161
quant. forb.	3161

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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Mo XXVIII

T: estim.	3345
quant.	3161
quant. forb.	3161

Mo XXIX

T: estim.	3345
quant.	3161
quant. forb.	3161

Mo XXX

T: estim.	3345
quant.	3149,3161,3451
quant. forb.	3161

(see also references on Al sequence)

Mo XXXI

T: quant.	3149,3161,3330, 3355,3451,3667
quant. forb.	3161

(see also references on Mg sequence)

Mo XXXII

T: quant.	3149,3161,3295, 3341,3355,3451, 3621
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(see also references on Na sequence)

Mo XXXIII

T: quant.	3355
-----------	------

(see also references on Ne sequence)

Mo XXXIV

T: quant.	3161,3706
quant. forb.	3161

(see also references on F sequence)

Mo XXXV

T: quant.	3161
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<u>Description</u>	<u>Reference No.*</u>
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quant. forb.	3161
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(see also references on O sequence)

Mo XXXVI

T: quant.	3161
-----------	------

quant. forb.	3161
--------------	------

(see also references on N sequence)

Mo XXXVII

T: quant.	3161
-----------	------

quant. forb.	3161
--------------	------

(see also references on C sequence)

Mo XXXVIII

T: quant.	3161
-----------	------

quant. forb.	3161
--------------	------

(see also references on B sequence)

Mo XXXIX

T: quant.	3161,3578,3690
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quant. forb.	3690
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(see also references on Be sequence)

Mo XL

T: quant.	3161,3295
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(see also references on Li sequence)

N (Nitrogen) Sequence

T: estim.	3240
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quant.	3272,3379
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quant. forb.	3379
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N (Nitrogen)

N I

E: emiss.	3539
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life	3144,3152,3514, 3560
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*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
misc.	3446
T: quant.	3251,3331

N II

E: life	3152,3346,3719
T: quant.	3086,3609,3677

(see also references on C sequence)

N III

E: life	3152,3346
T: quant.	3212,3608,3688
quant. forb.	3688

(see also references on B sequence)

N IV

E: life	3152,3589
T: quant.	3270,3395,3435, 3572,3610,3618, 3633,3689
quant. forb.	3436,3689

(see also references on Be sequence)

N V

E: life	3439,3579
T: quant.	3363,3505,3775

(see also references on Li sequence)

Na (Sodium) Sequence

T: CA	3225
estim.	3240,3375
interp.	3295,3423
interp. forb.	3335
quant.	1002,3128,3334, 3423,3625

<u>Description</u>	<u>Reference No.*</u>
Na (Sodium)	

Na I

E: absorpt.	3552
life	3147,3176,3387, 3603
misc. rel.	3613
T: CA	3622
quant.	3398,3502,3604, 3704,3736,3769

Na II

T: quant.	3399
(see also references on Ne sequence)	

Na V

E: life	3351
T: quant.	3331
(see also references on N sequence)	

Na VI

E: life	3351
(see also references on C sequence)	

Na VII

E: life	3351
(see also references on B sequence)	

Nb (Niobium)

Nb V

T: CA	3225
quant.	3672

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

Nd (Neodymium)

Nd II

E: emiss. 3229

Nd LVIII

T: quant. forb. 3275

(see also references on Li sequence)

Ne (Neon) Sequence

T: estim. 3240

interp. 3554,3713

quant. 3088,3271,3290,
3507,3595,3713

quant. forb. 3595

Ne (Neon)

Ne I

E: absorpt. 3296,3728

emiss. 3163,3234,3454,
3662

emiss. forb. 3454,3662

emiss. forb. rel. 3454,3662

emiss. rel. 2448,3226,3454,
3662,3744

life 2625,3199,3234,
3235,3244,3417,
3418,3662

T: CA 3408

quant. 2843,3388,3399

quant. rel. 1118,3376

Ne II

E: life 3204,3236

T: CA 3408

Description Reference No.*

quant. 3440,3448

(see also references on F sequence)

Ne III

E: life 3204

T: quant. 3201,3702

quant. forb. 3201

(see also references on O sequence)

Ne IV

E: life 3204

T: quant. 3331,3702

(see also references on N sequence)

Ne V

E: life 3204,3457

T: quant. 3201,3615,3677,
3702

quant. forb. 3201

(see also references on C sequence)

Ne VI

E: life 3204

(see also references on B sequence)

Ne VII

T: quant. 3161,3395,3435,
3578,3618,3633,
3689

quant. forb. 3436,3689

(see also references on Be sequence)

Ne VIII

E: misc. 2842

T: quant. 3161,3363,3505

quant. forb. 3275

(see also references on Li sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>Ne IX</u>		<u>Ni XVII</u>	
E: misc.	2842	T: quant. forb.	3161
T: quant	3221,3709,3777	(see also references on Mg sequence)	
quant. forb.	3436,3777	<u>Ni XVIII</u>	
(see also references on He sequence)		E: life	3481,3636
<u>Ne X</u>		(see also references on Na sequence)	
E: misc.	2842	<u>Ni XIX</u>	
(see also references on H sequence)		E: misc.	2842
Ni (Nickel)		T: quant.	3425,3554
<u>Ni I</u>		quant. forb.	3161,3425
E: absorpt.	3552	(see also references on Ne sequence)	
emiss.	3461	<u>Ni XX</u>	
<u>Ni II</u>		T: quant. forb.	3161
E: emiss.	3461	(see also references on F sequence)	
<u>Ni III</u>		<u>Ni XXI</u>	
E: life	3117	T: quant.	3087,3135
T: quant.	3322	quant. forb.	3135,3161
<u>Ni IV</u>		(see also references on O sequence)	
T: quant.	3322	<u>Ni XXII</u>	
<u>Ni V</u>		T: quant. forb.	3161
T: quant.	3322	(see also references on N sequence)	
<u>Ni VI</u>		<u>Ni XXIII</u>	
T: quant.	3322	T: quant. forb.	3161
<u>Ni VIII</u>		(see also references on C sequence)	
T: quant.	3084	<u>Ni XXIV</u>	
<u>Ni XV</u>		T: quant. forb.	3161
T: quant. forb.	3161	(see also references on B sequence)	
<u>Ni XVI</u>		<u>Ni XXV</u>	
T: quant. forb.	3161	T: quant.	3594
(see also references on Al sequence)		(see also references on Be sequence)	

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
<u>Ni XXVI</u>	
T: quant.	3087,3492,3594
quant. forb.	3087
(see also references on Li sequence)	

<u>Ni XXVII</u>	
T: quant.	3221
(see also references on He sequence)	

Np (Neptunium)

<u>Np I</u>	
E: life	3735

O (Oxygen) Sequence

T: estim.	3240
quant.	3379
quant. forb.	3379

O (Oxygen)

<u>O I</u>	
E: emiss. rel.	3360
life	3144,3177,3473, 3514,3770
misc. rel.	3739
T: quant.	3264,3268,3665
quant. forb.	3179
Compilation:	3301

<u>O II</u>	
E: life	3152,3482
T: quant.	3213,3331,3762
(see also references on N sequence)	

<u>Description</u>	<u>Reference No.*</u>
<u>O III</u>	
E: life	3152,3482,3719
T: quant.	3213,3545,3677, 3761
quant. forb.	3545
(see also references on C sequence)	

<u>O IV</u>	
E: life	3482
T: quant.	3166
(see also references on B sequence)	

<u>O V</u>	
E: life	3589
T: quant.	3155,3270,3395, 3435,3572,3610, 3618,3633,3689
quant. forb.	3436,3633,3689
(see also references on Be sequence)	

<u>O VI</u>	
E: life	3439
T: quant.	3363,3505,3572
(see also references on Li sequence)	

<u>O VII</u>	
E: life	3289,3573
misc.	2842
T: quant.	3726
quant. forb.	3436

(see also references on He sequence)

<u>O VIII</u>	
E: misc.	2842
(see also references on H sequence)	

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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P (Phosphorus)

P I

T: quant.	3214
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P II

E: life	3500
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T: quant.	3214,3632
-----------	-----------

P III

T: quant.	3214
-----------	------

(see also references on Al sequence)

P IV

T: quant.	2843,3650
-----------	-----------

quant. forb.	3436
--------------	------

(see also references on Mg sequence)

P V

T: quant.	3398
-----------	------

(see also references on Na sequence)

P VI

T: interp.	3332
------------	------

(see also references on Ne sequence)

P XII

E: life	3695
---------	------

(see also references on Be sequence)

P XIII

T: quant. forb.	3344
-----------------	------

(see also references on Li sequence)

P XIV

T: quant.	3136,3137
-----------	-----------

(see also references on He sequence)

<u>Description</u>	<u>Reference No.*</u>
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Pb (Lead)

Pb I

E: emiss.	3654,3674
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emiss. forb. rel.	3647
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life	3267
------	------

T: quant.	3383,3668
-----------	-----------

Pb II

E: emiss.	3674
-----------	------

Pb IV

T: quant.	3671
-----------	------

Pb LIII

T: quant.	3161
-----------	------

(see also references on Zn sequence)

Pb LIV

T: quant.	3161
-----------	------

(see also references on Cu sequence)

Pb LV

T: quant.	3161
-----------	------

Pb LXIV

T: quant.	3161
-----------	------

(see also references on K sequence)

Pr (Praseodymium)

Pr V

T: CA	3225
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quant.	3672
--------	------

Pr XIII

T: quant.	3563
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(see also references on Ag sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
Pt (Platinum)			
		<u>S II</u>	
	<u>Pt I</u>	E: life	3500
E: life	3488	T: quant.	3214
	<u>Pt LI</u>	<u>S III</u>	
T: quant.	3795	E: life	3373,3374,3500
		T: quant.	3214,3632
Ra (Radium)		<u>S IV</u>	
	<u>Ra I</u>	E: life	3373,3374
T: quant.	3403	T: quant.	3616
	<u>Ra II</u>	(see also references on Al sequence)	
T: CA	3225	<u>S V</u>	
Rb (Rubidium)		E: life	3373,3374
	<u>Rb I</u>	T: quant.	2843,3650,3667
E: absorpt.	3558	quant. forb.	3436
absorpt. forb.	3252,3472	Comment:	3569
life	3228,3412,3503, 3776	(see also references on Mg sequence)	
T: CA	3225,3622	<u>S VI</u>	
quant.	3672,3673,3704	E: life	3373,3374
	<u>Rb II</u>	T: quant.	3398
E: emiss.	3743	(see also references on Na sequence)	
Re (Rhenium)		<u>S VII</u>	
	<u>Re XLVIII</u>	E: life	3390,3391,3611
T: quant.	3794	T: quant.	3554
S (Sulfur)		(see also references on Ne sequence)	
	<u>S I</u>	<u>S VIII</u>	
E: life	3500	E: life	3390
		T: quant.	3390
		(see also references on F sequence)	
		<u>S IX</u>	
		E: life	3390

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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T: quant.	3201,3390,3546
quant. forb.	3201,3546

(see also references on O sequence)

S X

T: quant.	3201,3763
quant. forb.	3201,3763

(see also references on N sequence)

S XI

T: quant.	3201,3456
quant. forb.	3201,3456

(see also references on C sequence)

S XIII

E: life	3260,3695
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(see also references on Be sequence)

S XIV

E: life	3259,3260
T: quant. forb.	3344

(see also references on Li sequence)

S XV

T: quant.	3136,3137,3221
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(see also references on He sequence)

Sb (Antimony)

Sb I

E: life	3258,3504
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Sb II

E: life	3478,3504
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Sb III

E: life	3116
---------	------

Sb V

T: quant.	3671
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(see also references on Ag sequence)

<u>Description</u>	<u>Reference No.*</u>
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Sc (Scandium)

Sc I

E: absorpt.	3552
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Sc III

E: life	3117
---------	------

T: CA	3225
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(see also references on K sequence)

Se (Selenium)

Se I

T: quant.	3665
-----------	------

Se IV

E: life	3116
---------	------

Se XXVI

T: quant.	3148,3550,3706
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(see also references on F sequence)

Se XXVII

T: quant.	3135
-----------	------

quant. forb.	3135
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(see also references on O sequence)

Si (Silicon)

Si I

E: emiss.	1533,3703
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life	3541
------	------

T: quant.	3214,3632
-----------	-----------

Si II

E: emiss.	1533,3787
-----------	-----------

life	3500
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*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
T: quant.	3214,3255,3350
quant. forb.	3255

(see also references on Al sequence)

Si III

E: emiss.	1533
T: quant.	2843,3214,3650
quant. forb.	3436

(see also references on Mg sequence)

Si IV

T: quant.	3241,3398
quant. forb.	3335

(see also references on Na sequence)

Si V

E: life	3178
T: interp.	3332
quant.	3178,3554,3624

(see also references on Ne sequence)

Si VI

E: life	3178
T: quant.	3167

(see also references on F sequence)

Si VII

T: interp.	3332
quant.	3134,3140,3167, 3201,3546
quant. forb.	3201,3546
quant. rel.	3626

(see also references on O sequence)

Si VIII

E: life	3288
T: quant.	3141,3167,3201, 3331,3763

<u>Description</u>	<u>Reference No.*</u>
quant. forb.	3201,3763

(see also references on N sequence)

Si IX

E: life	3288
T: quant.	3142,3167,3201, 3456
quant. forb.	3201,3456

(see also references on C sequence)

Si X

E: life	3288
T: quant.	3167

(see also references on B sequence)

Si XI

E: life	3288,3390,3480, 3695,3722
T: quant.	3167,3390,3395, 3617,3620
quant. forb.	3167

(see also references on Be sequence)

Si XII

E: life	3288,3390,3480
T: quant.	3167,3390,3721, 3779
quant. forb.	3167,3344

(see also references on Li sequence)

Si XIII

E: life	3536,3720
T: quant.	2627,3136,3137, 3167,3721,3726

(see also references on He sequence)

Si XIV

T: quant.	3167
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(see also references on H sequence)

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

Sm (Samarium)

Sm I

E: hook rel. 3130
life 3132,3452,3766

Sm II

E: emiss. 3708
life 3337

Sm XXXV

T: quant. 3794

Sn (Tin)

Sn I

E: absorpt. rel. 3682
emiss. 3300,3675
T: quant. 3668

Sn II

E: emiss. 3300,3675
life 3116

Sn IV

T: quant. 3563,3671
(see also references on Ag sequence)

Sn XXI

T: quant. 3161
(see also references on Zn sequence)

Sn XXII

T: quant. 3161,3172
(see also references on Cu sequence)

Sn XXIII

T: quant. 3161

Description Reference No.*

Sn XLVIII

T: quant. forb. 3275
(see also references on Li sequence)

Sr (Strontium)

Sr I

E: life 3182,3190,3591,
3639,3694
T: quant. 3188,3227,3403,
3406,3450

Sr II

E: life 3431,3592,3694
T: CA 3225
quant. 2840,3672

Sr XXVIII

T: quant. 3621
(see also references on Na sequence)

Ta (Tantalum)

Ta XLVI

T: quant. 3794

Tb (Terbium)

Tb XIX

T: quant. 3563
(see also references on Ag sequence)

Te (Tellurium)

Te I

T: quant. 3665

Te IV

E: life 3116

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>
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Te VI

T: quant.	3671
(see also references on Ag sequence)	

Th (Thorium)

Th II

Comment:	3567
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Th IV

T: CA	3225
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Th XLIV

T: quant.	3563
(see also references on Ag sequence)	

Ti (Titanium)

Ti I

E: absorpt.	3552,3788
emiss.	3297,3430
hook	3430,3499
Comment:	3559

Ti III

E: life	3117
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Ti IV

T: CA	3225
(see also references on K sequence)	

Ti VII

T: quant.	3201
quant. forb.	3201

Ti XII

T: quant.	3556
quant. forb.	3335
(see also references on Na sequence)	

<u>Description</u>	<u>Reference No.*</u>
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Ti XIII

T: quant.	3554
(see also references on Ne sequence)	

Ti XIV

T: quant. forb.	3791
(see also references on F sequence)	

Ti XV

T: quant.	3201,3508
quant. forb.	3201,3791
(see also references on O sequence)	

Ti XVI

T: quant. forb.	3201
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Ti XVII

T: quant. forb.	3791
(see also references on C sequence)	

Ti XXI

E: life forb.	3184
(see also references on He sequence)	

Tl (Thallium)

Tl I

E: life	3183,3191,3281
life forb.	3323
T: quant.	2839,3248,3383, 3397,3459,3670
quant. forb.	3248

Tl II

E: life	3281
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Tl III

E: life	3281
T: quant.	3671

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

Tm (Thulium)

Tm I
E: life 3338
Tm II
E: life 3338

U (Uranium)

U I
E: absorpt. 3336,3701
emiss. 3207,3402
emiss. rel. 3299
life 3089,3150,3207,
 3267,3402,3676
Comment: 3659

U II
E: misc. 3150
Comment: 3659

U LXIII
T: quant. 3497
(see also references on Zn sequence)

U LXXV
T: quant. 3224
(see also references on Ar sequence)

U LXXXIV
T: quant. 3706
(see also references on F sequence)

V (Vanadium)

V I
T: quant. 3333

Description Reference No.*

V II
T: quant. 3215

V III
E: emiss. 3396
life 3117

V V
T: CA -3225
(see also references on K sequence)

V VI
T: quant. 3224
(see also references on Ar sequence)

V XII
T: quant. 3637
(see also references on Mg sequence)

V XX
T: quant. 3348
(see also references on Be sequence)

V XXII
E: life forb. 3184
T: quant. 3740
quant. forb. 3740
(see also references on He sequence)

W (Tungsten)

W I
E: hook rel. 3498

W XXVIII
T: quant. 3563
quant. forb. 3161
(see also references on Ag sequence)

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
	<u>W XXX</u>		<u>W XLVI</u>
T: quant. forb.	3161	T: quant.	3161,3172,3295 (see also references on Cu sequence)
	<u>W XXXI</u>		<u>W XLVII</u>
T: quant. forb.	3161	T: quant.	3161,3794
	<u>W XXXVII</u>		<u>W XLVIII</u>
T: quant. forb.	3161	T: quant. forb.	3161
	<u>W XXXVIII</u>		<u>W XLIX</u>
T: quant.	3161	T: quant. forb.	3161
quant. forb.	3161		<u>W LV</u>
	<u>W XXXIX</u>	T: quant. forb.	3161
T: quant.	3161		<u>W LVI</u>
quant. forb.	3161	T: quant.	3161
	<u>W XL</u>	quant. forb.	3161 (see also references on K sequence)
T: quant.	3161		<u>W LVII</u>
quant. forb.	3161	T: quant.	3161,3224
	<u>W XLI</u>	quant. forb.	3161 (see also references on Ar sequence)
T: quant.	3161		<u>W LVIII</u>
	<u>W XLII</u>	T: quant.	3161
T: quant.	3161	quant. forb.	3161
quant. forb.	3161		<u>W LIX</u>
	<u>W XLIII</u>	T: quant.	3161
	<u>W XLIV</u>		<u>W LX</u>
T: quant.	3161,3295	T: quant.	3161
quant. forb.	3161		<u>W LXI</u>
	<u>W XLV</u>	T: quant.	3161
T: quant.	3161,3497	quant. forb.	3161
quant. forb.	3161		
(see also references on Zn sequence)			

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>W LXII</u>		<u>Xe II</u>	
T: quant.	3161	E: emiss.	3408
quant. forb.	3161	life	3243,3490,3565, 3678
(see also references on Al sequence)		T: CA	3408
<u>W LXIII</u>		quant.	3187,3628
T: quant.	3161	<u>Xe III</u>	
(see also references on Mg sequence)		E: life	3768
<u>W LXIV</u>		<u>Xe VIII</u>	
T: quant.	3161	E: life	3700
(see also references on Na sequence)		T: quant.	3563
<u>W LXVI</u>		(see also references on Ag sequence)	
T: quant.	3706,3710	<u>Xe XVIII</u>	
(see also references on F sequence)		T: quant. forb.	3161
<u>W LXXI</u>		<u>Xe XIX</u>	
T: quant.	3161,3578	T: quant. forb.	3161
(see also references on Be sequence)		<u>Xe XX</u>	
<u>W LXXII</u>		T: quant. forb.	3161
T: quant.	3161	<u>Xe XXI</u>	
(see also references on Li sequence)		T: quant. forb.	3161
Xe (Xenon)		<u>Xe XXII</u>	
<u>Xe I</u>		T: quant. forb.	3161
E: absorpt.	3269	<u>Xe XXIII</u>	
emiss.	3408	T: quant. forb.	3161
hook	3652	<u>Xe XXIV</u>	
life	3287,3302,3417, 3638,3729,3730	T: quant. forb.	3161
misc.	3180,3649	<u>Xe XXV</u>	
T: CA	3408,3433	T: quant.	3161
quant.	3180,3326	quant. forb.	3161
		(see also references on Zn sequence)	

*The numbers refer to paper identification numbers of Section 3.

<u>Description</u>	<u>Reference No.*</u>	<u>Description</u>	<u>Reference No.*</u>
<u>Xe XXVI</u>		<u>Xe XLVI</u>	
T: quant.	3161,3172,3295	T: quant.	3706
(see also references on Cu sequence)		(see also references on F sequence)	
<u>Xe XXVII</u>		<u>Xe LI</u>	
T: quant.	3161	T: quant.	3161
<u>Xe XXVIII</u>		(see also references on Be sequence)	
T: quant. forb.	3161	<u>Xe LII</u>	
<u>Xe XXIX</u>		T: quant.	3161,3295
T: quant. forb.	3161	(see also references on Li sequence)	
<u>Xe XXXV</u>		Y (Yttrium)	
T: quant. forb.	3161	<u>Y I</u>	
<u>Xe XXXVI</u>		E: life	3325
T: quant.	3161	<u>Y II</u>	
(see also references on K sequence)		E: life	3325
<u>Xe XXXVII</u>		<u>Y III</u>	
T: quant. forb.	3161	T: CA	3225
(see also references on Ar sequence)		quant.	3672
<u>Xe XXXVIII</u>		Yb (Ytterbium)	
T: quant. forb.	3161	<u>Yb I</u>	
<u>Xe XL</u>		E: life	3339,3627
T: quant. forb.	3161	<u>Yb II</u>	
<u>Xe XLI</u>		E: life	3339
T: quant. forb.	3161	Zn (Zinc) Sequence	
<u>Xe XLII</u>		T: interp.	3282,3497,3511
T: quant. forb.	3161	quant.	3282,3382,3598
(see also references on Al sequence)			
<u>Xe XLIII</u>			
T: quant.	3161		
(see also references on Mg sequence)			
<u>Xe XLIV</u>			
T: quant.	3161,3295		
(see also references on Na sequence)			

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

Zn (Zinc)

Zn I

E: life 3216,3218,3496,
3663,3693

T: quant. 3403

Zn II

E: life 3496,3663,3693

T: quant. 3172

(see also references on Cu sequence)

Zn III

E: life 3117

Zn XVII

T: quant. 3416

Zn XIX

T: quant. 3416

(see also references on Mg sequence)

Zn XX

T: quant. 3341

(see also references on Na sequence)

Zn XXII

T: quant. 3148,3550,3778

(see also references on F sequence)

Zn XXIII

T: quant. 3135

quant. forb. 3135

(see also references on O sequence)

Zn XXVIII

T: quant. forb. 3275

(see also references on Li sequence)

Zn XXIX

T: quant. 3709,3777

*The numbers refer to paper identification numbers of Section 3.

Description Reference No.*

quant. forb. 3777

(see also references on He sequence)

Zr (Zirconium)

Zr I

E: life 3267,3325

Zr II

T: quant. 3450

Zr III

T: quant. 3450

Zr IV

T: CA 3225

quant. 3672

Zr XXX

T: quant. 3621

(see also references on Na sequence)

Zr XXXVIII

T: quant. forb. 3275

(see also references on Li sequence)

Zr XXXIX

T: quant. 3777

quant. forb. 3777

(see also references on He sequence)

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5. ERRATA

<u>Ref. No.*</u>	<u>Corrections or Additions to NBS Special Publication 505 (1978)</u>
511	In Section 2, the entry should be listed as Sr I and In I (E: absorpt. hook) instead of Sr I and In I (E: hook).
573	In Section 2, this entry should not be listed under Sc I (T: CA).
656	In Section 2, the entry should be listed as Sr I (E: absorpt. hook) instead of Sr I (E: hook).
726	In Section 2, the entry should be listed as K I (E: absorpt. hook) instead of K I (E: hook).
813	In Section 4, this reference number should be added under the authors J. Aarts and G. Bosch.
936	In Section 2, the entry should be added under Ni I (compilation).
987	In Section 3, the authors P. A. Rice and D. V. Ragone should be added to this reference.
1043	In Section 2, the entry should be added under Fe I (E: emiss; compilation) instead of Fe I (E: emiss. rel.).
1074	In Section 2, the entry should be added under He I (E: life).
1100	In Section 2, this entry should be listed under C III (T: quant.) instead of O III (T: quant.)
1161	In Section 2, the entry should be listed under Li II (T: quant.) instead of Li I (T: quant.).
1164	In Section 2, the entry should be added under Ar I (comment).
1168	In Section 3, this reference should be listed under 1965, not 1967, and is incorporated into this supplement and given a new number-- <u>1002</u> .

*The numbers refer to paper identification numbers in Sections 2, 3, and 4 of the prior bibliography, NBS Spec. Publ. 505.

- 1194 In Section 2, the entry should be added under N III-V (E: life).
- 1236 In Section 2, the entry should be listed as Ga I and In I (E: absorpt. hook) instead of Ga I (E: absorpt.) and In I (E: absorpt.; E: hook).
- 1297 In Section 2, the entry should be listed under Tb I (comment) instead of Tb I (E: emiss. rel.).
- 1298 In Section 2, the entry should be listed as Fe I (compilation) instead of Fe I (E: emiss.).
- 1344 In Section 2, the entry should be listed as Eu I (E: absorpt. hook) instead of Eu I (E: hook).
- 1426 In Section 3, the author G. W. Wares should be added to this reference.
- 1542 In Section 4, it should be noted that H. O. Knox and H. O. Dickinson are the same authors.
- 1610 In Section 2, the entry should not be listed under Ni IX (T: quant.).
- 1612 In Section 2, the entry should be added under C II (T: quant.) and B Sequence (T: interp.). It should also be listed under N III, O IV, F V, Na VII, Mg VIII, Al IX, Si X, and P XI as (T: estim.) instead of (T: interp.).
- 1694 In Section 2, the entry should be listed under Cu I (compilation) instead of Cu I (comment).
- 1703 In Section 4, it should be noted that H. O. Knox and H. O. Dickinson are the same authors.
- 1727 In Section 2, the entry should be added under Lu I (E: emiss.).
- 1887 In Section 2, the entry should be listed under I I (E: life forb.) instead of I I (E: life).
- 1913 In Section 2, the entry should be added under Lu I (E: emiss.).
- 2000 In Section 2, the entry should be listed under Fe XXII (T: quant.) instead of Fe XXI (T: quant.).

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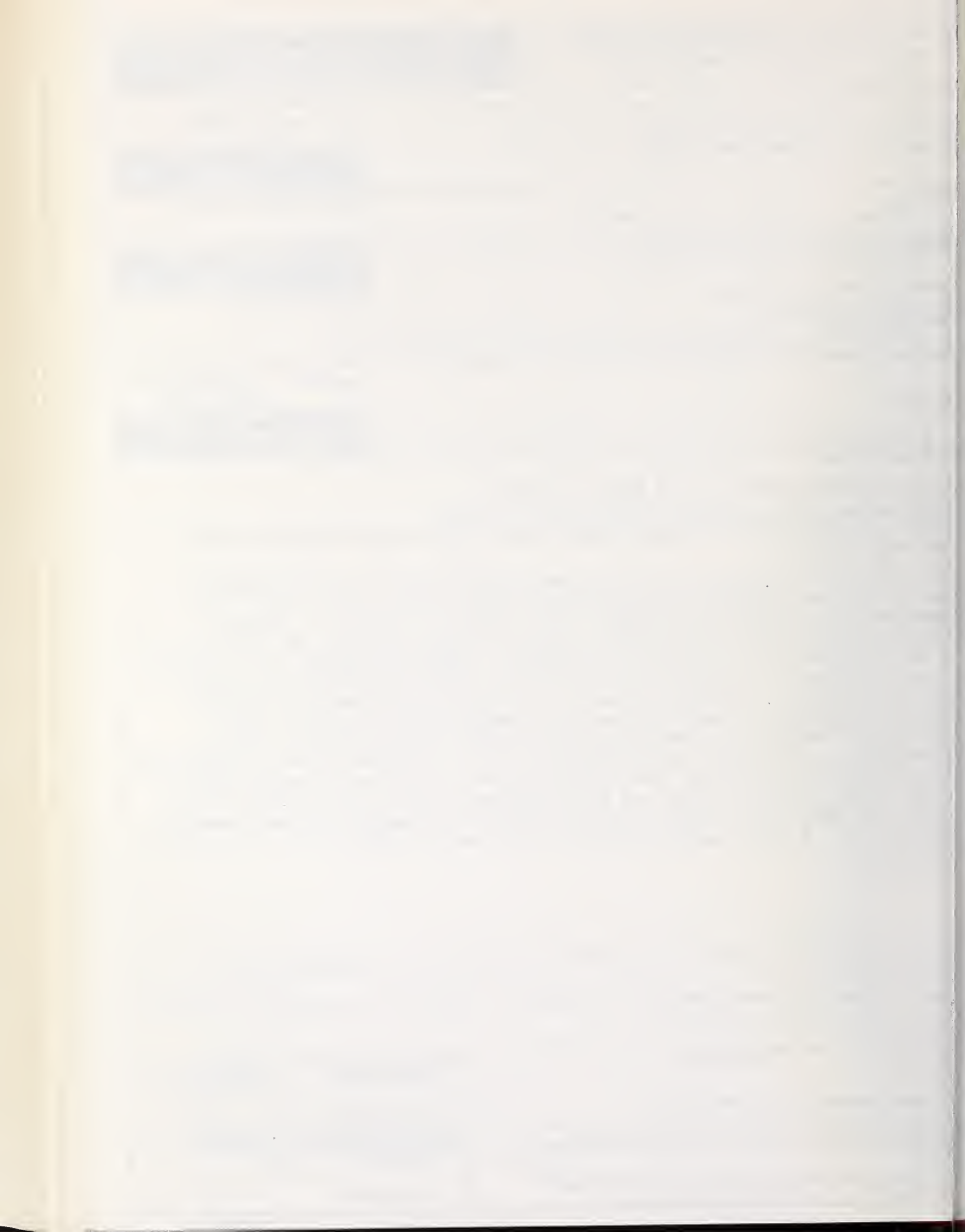
- 2139 In Section 2, the entry should be added under Ar XVII (E: life).
- 2171 In Section 2, the entry should be added under Fe XXV (T: quant. forb.).
- 2385 In Section 3, add the reference Phys. Rev. A 20, 1285 (1979). The entry should be added under Cs I (T: estim.). This addendum is incorporated into this supplement.
- 2436 In Section 4, the author W. Wieme and this reference number should be added.
- 2507 In Section 2, the entry should be listed under S XV (E: life) instead of S XV (E: life forb.).
- 2532 In Section 2, the entry should be added under Fe XXV (E: life).
- 2742 In Section 3, add the reference Phys. Rev. A 18, 309 (1978). This erratum is incorporated into this supplement.
- 2749 In Section 2, the entry should be added under He Sequence (T: quant. forb.).
- 2774 In Section 2, the entry should be added under Fe XVII and Ni XIX (T: quant. forb.).
- 2909 In Section 2, the entry should be listed under I I (E: life forb.) instead of I I (E: life).
- 2911 In Section 2, this entry should be listed as U II (comment) instead of U II (compilation).
- 2912 In Section 2, the entry should be listed as U I (comment) instead of U I (compilation).
- 2944 In Section 3, this reference should appear under 1977, not 1976. This reference, incorporated into this supplement, is given a new number--3172.
- 2991 In Section 2, the entry should be listed under Yb I (E: absorpt.) instead of Y I (E: absorpt.).

*The numbers refer to paper identification numbers in Sections 2, 3, and 4 of the prior bibliography, NBS Spec. Publ. 505.

- 3044 In Section 2, the entry should be added under Ne III, IV, Br VI, VII, O I, II, B III, N I, V, C II, IV, F II, III (E: life).
- 3068 In Section 2, the entry should be added under He Sequence (T: quant. forb.).
- 3142 In Section 2, the entry should be added under Fe XXV (E: life forb.) and Kr XXXV (E: life forb.). It should also be listed under Ti XXI (E: life forb.) instead of Ti XXI (E: life) and under V XXII (E: life forb.) instead of V XXII (E: life). This reference is incorporated into this supplement and given a new number--3184.
- 3198 In Section 2, the entry should be listed under He I and Ne I (E: absorpt) instead of He I and Ne I (E: misc.). This reference, incorporated into this supplement, is given a new number--3296.

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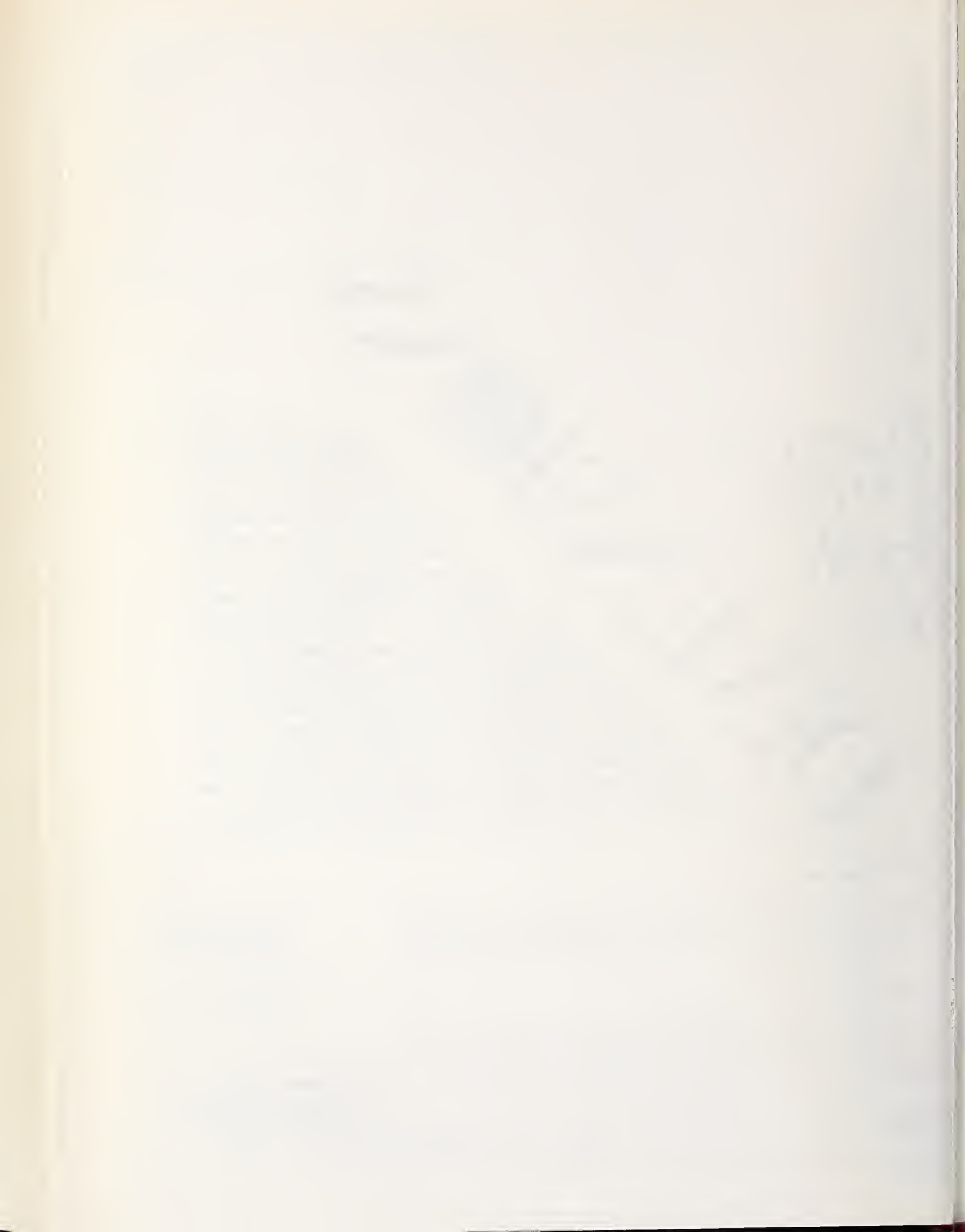
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